

# **COLLATERAL IMPACTS OF THE TREE MORTALITY DISASTER**



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Blue Ridge Services

# Trees!

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## Trees are the focus

- How many trees are there?
- How much money will it cost?
- How long will the process take?





# Trees!

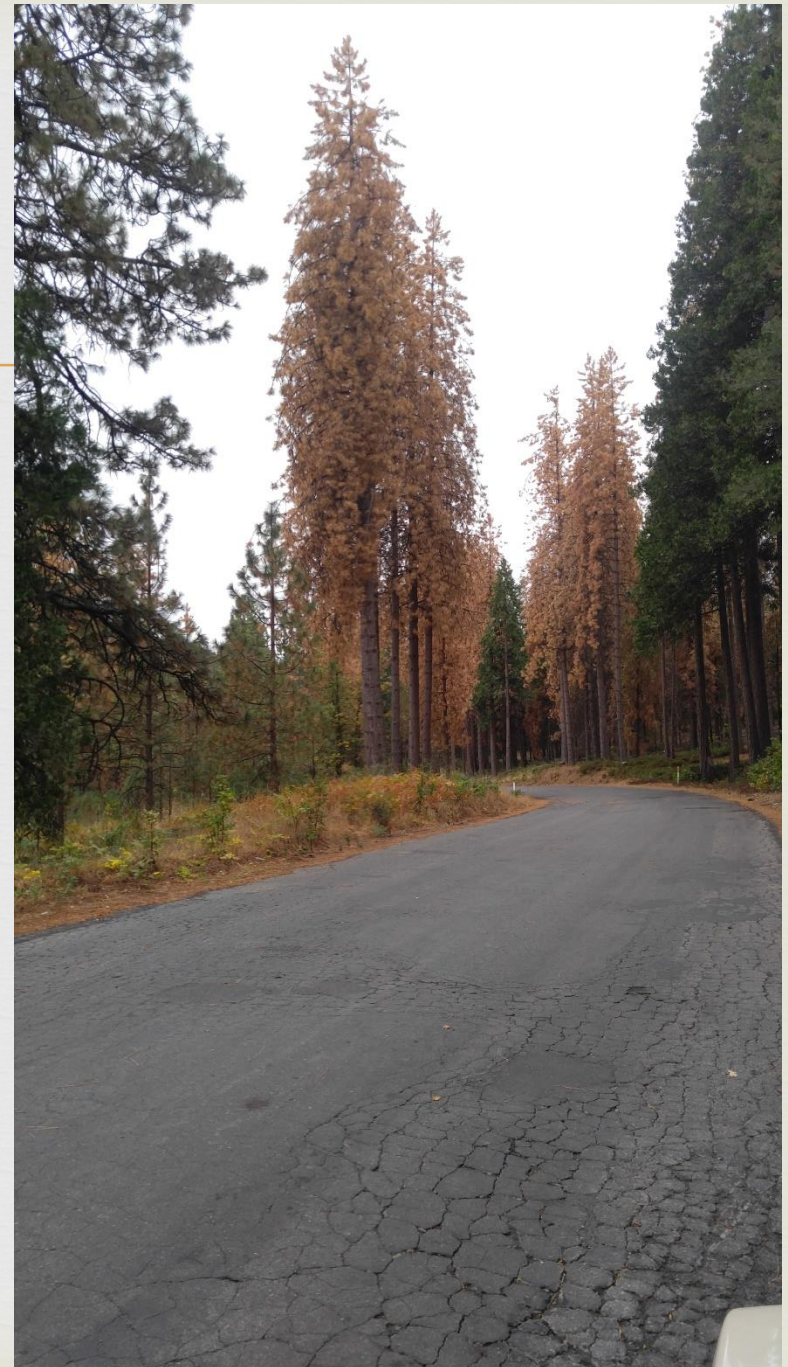


## ❧ Trees are the focus

- ❧ How many trees are there?
- ❧ How much money will it cost?
- ❧ How long will the process take?

## ❧ But there are other issues...

- ❧ One of the most significant is local road damage

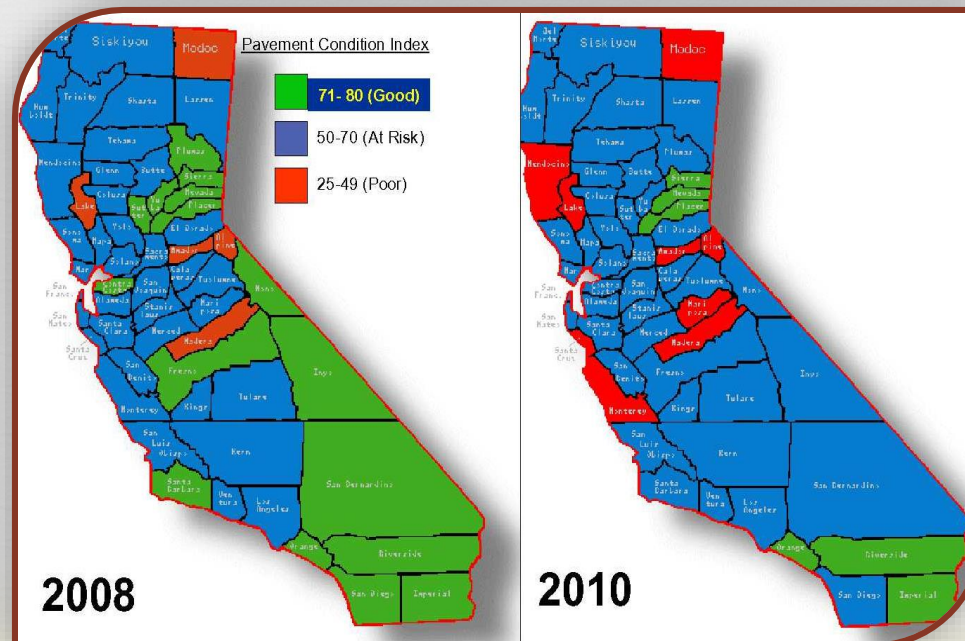


# A Recent Study Showed:



☞ Roads:	\$149,000,000
☞ Bridges:	<u>\$16,900,000</u>
☞ Total:	<u>\$165,900,000</u>

**MARIPOSA COUNTY**





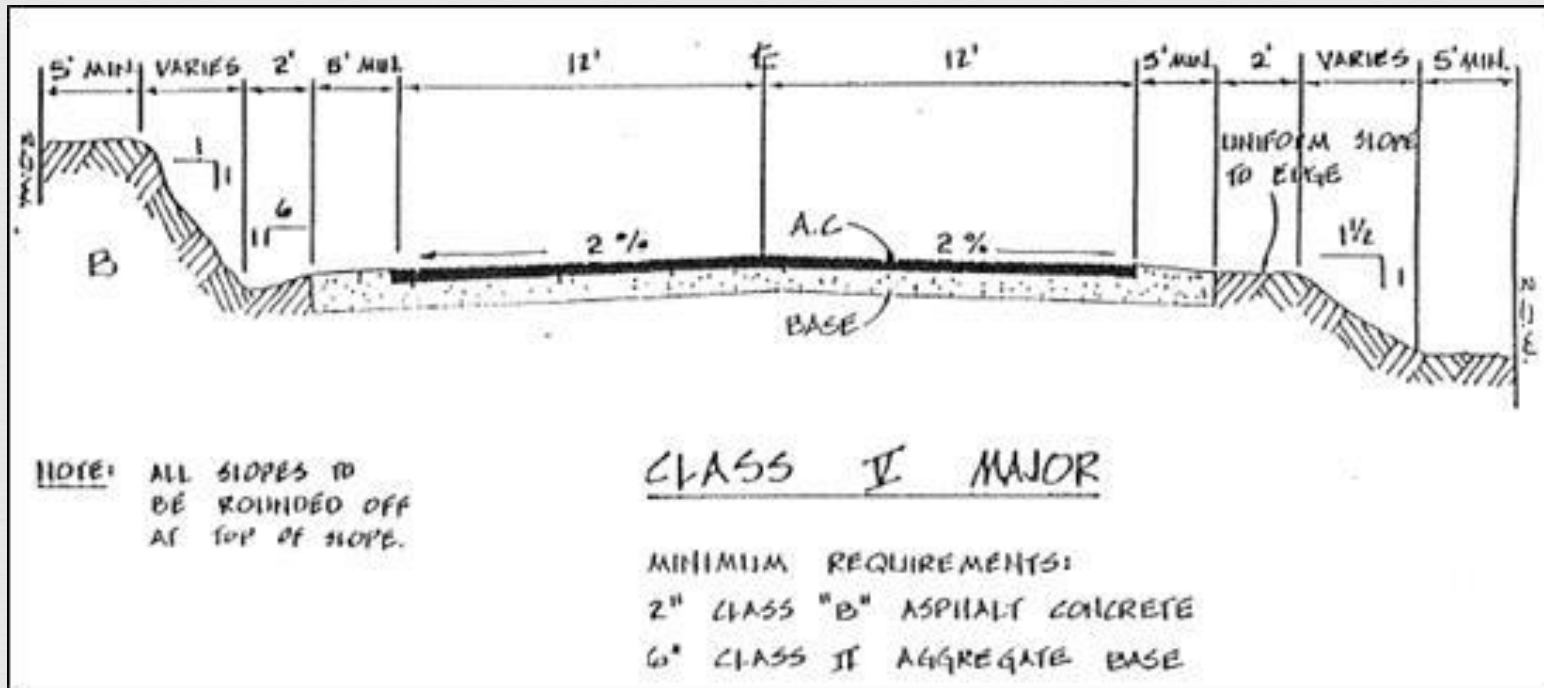
# Heavy Loads



*Multiply Road Damage*



# County Road Design





# Design Life



- ❧ Roads are designed for a specific service life.
- ❧ But of course ...it depends on the number of loads ...and the type of loads



# Putting Numbers to It



- ❧ Equivalent Single Axle Load (ESAL)
- ❧ Reference Load is 18,000 lbs on a single axle w/  
duals
- ❧ County Roads are typically designed for a service  
life of approximately 20,000 ESALs



# Passenger Cars...



- ❧ The effect of a passenger car on a county road is negligible
- ❧ Some studies have indicated that 10,000 passenger car trips is equivalent to just one logging truck
- ❧ It's those heavy, concentrated loads that do the damage.

# What it Looks Like



Logging Truck



12,000

34,000

17,000

17,000

Debris Truck



28,000

12,000



# How Many ESALs?



## Logging Truck

**2.89 ESAL<sub>(loaded)</sub>**

**0.14 ESAL<sub>(empty)</sub>**



## Debris Truck

**0.69 ESAL<sub>(loaded)</sub>**

**0.1 ESAL<sub>(empty)</sub>**



# How Much Money?



- ⌘ A 2" / 6" county road is good for ~ 20,000 ESALs
- ⌘ Cost to rebuild 1 mile of County Road: \$500,000
- ⌘ So, every ESAL costs \$25 per mile
  
- ⌘ A loaded logging truck causes \$72.25/mile in road damage
  - ⌘ ...and an empty one causes \$3.50/mile in road damage
- ⌘ So, average cost per round-trip mile is \$37.88
- ⌘ Average haul distance is 28 miles...
- ⌘ Road Damage is: \$1,061 per (logging) truck load



# How Much Money?



- ⌘ A 2/6 county road is good for ~ 20,000 ESALs
- ⌘ Cost to rebuild 1 mile of County Road: **\$500,000**
- ⌘ So, every ESAL costs **\$25** per mile
  
- ⌘ A loaded debris truck causes **\$17.25** mile in road damage
  - ⌘ ...and an empty one causes \$2.50/mile in road damage
- ⌘ So, average cost per round-trip mile is \$9.88
- ⌘ **Average haul distance is 28 miles...**
- ⌘ **Road Damage is: \$277 per (debris) truck load**

# The Bottom Line



- ❧ Average transport distance on County Roads is 28 miles round trip (14L + 14E)
- ❧ Logging Truck road damage cost:
  - ❧ \$1,061 per load
- ❧ Debris Truck road damage cost:
  - ❧ \$277 per load



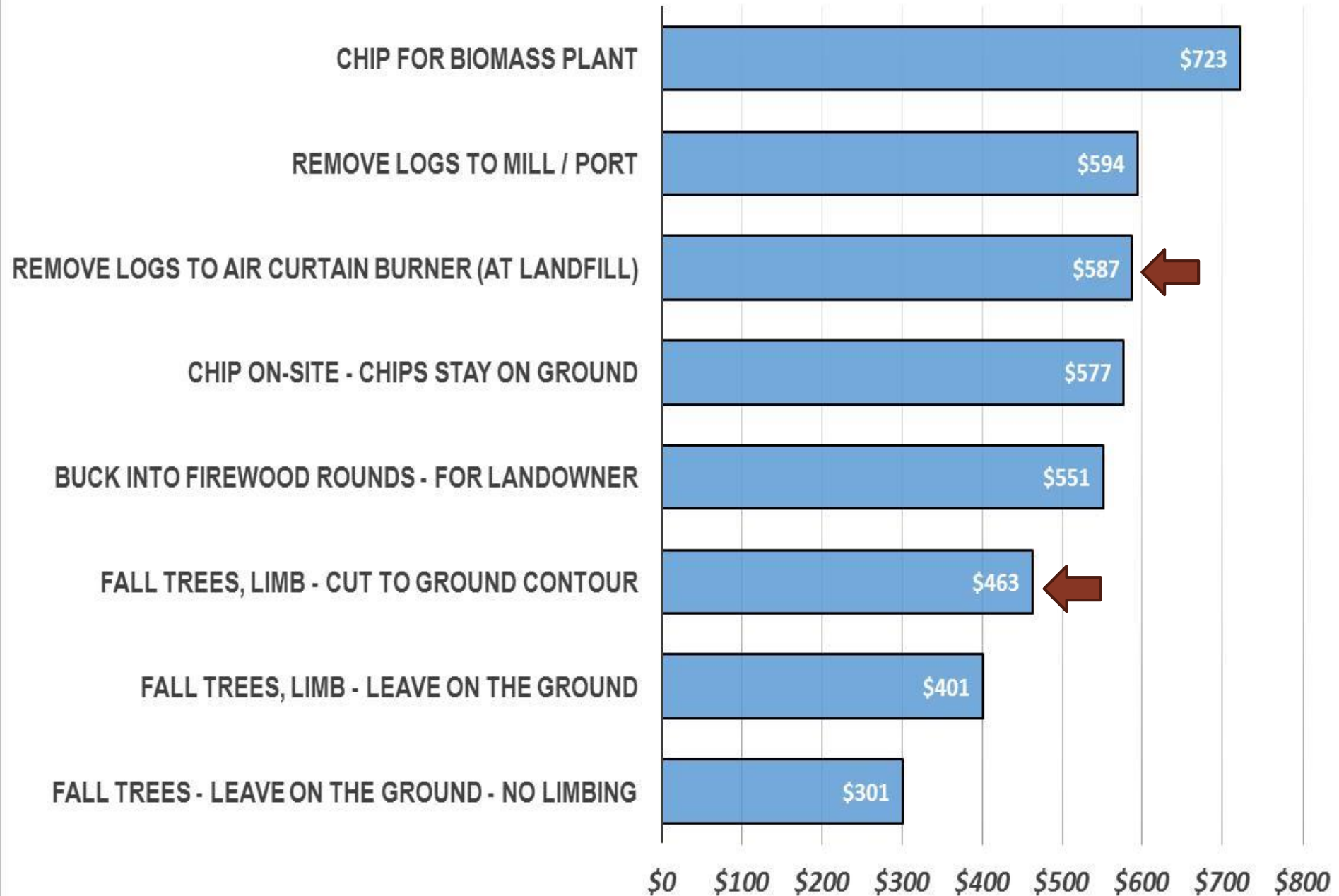


# Minimizing Road Damage



1. Reduce the number of trees removed
  - a) Fall ...Lop and Scatter ...Cut to Contour
2. Transport trees in smaller loads
  - a) Debris trucks
  - b) Dump Trailers

# Relative Cost per Tree



# Non-Removal Option



✧ In some cases, we expect we'll not be removing the trees. Options include:

✧ Lop, Scatter and Cut-to-Contour

✧ Landowner can:

✧ Cold Deck

✧ Pile slash

✧ Cut into Rounds

✧ Mill





# Removal Option



✧ In some cases, we will remove the trees. In those cases we will try to minimize cost and impact by:

✧ Moving smaller pieces with a skid-steer

✧ Loading into debris trucks or dump trailers to minimize road damage



# Air Curtain Burner

Mariposa County Landfill





# Chipping at a Local Landfill

⌘ Operating cost: \$71/ton  
⌘ Revenue: \$15/ton

**Example**





# Short Logs – Easier to Handle



- ❧ Shorter logs are easier to handle at the landfill



# Contact Info



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